WHAT IS CLAIMED

1) A web alignment device to align a web of continuous print medium having two outer edges and originating from an upstream device to a stable lateral position with respect to a printing system for further printing on said continuous web, the printing system having a friction drive downstream of the web alignment device, the alignment device comprising:

- Mechanical means for defining an entry position of a web, the web contacting the mechanical means in sliding or rolling, the web being supplied as a nearly tension free loop,
- Braking means to reduce the tension-force per unit of medium width at the end of an alignment zone compared to the tension force per unit of medium width downstream as exerted by the friction drive of the printing system by a factor of at least 3,
- Means defining a partially curved first web movement trajectory including areas where the print medium slides in friction contact with a curved surface, the means for defining the partially curved first web movement trajectory being located upstream of said braking means, the sliding zone of the first trajectory extending over a finite length L1 satisfying the relation

$$L1 > \max (50 \text{ mm}, P/4)$$

where P corresponds to the width of the print medium,

- Adjustable lateral guiding means adjustable in width to contact at either of the two outer edges or at both outer edges of said print medium, thus limiting the lateral movement dimension available for said print medium in two opposing directions, the adjustable guiding means extending over a finite second web movement trajectory of said print medium, wherein the second trajectory with side guides on both side edges of the web extends in the upstream direction to further than said means for defining the entry position and comprises at least a part of the first trajectory where said print medium is in sliding contact with said means defining said partially curved first trajectory, the length (L2) of simultaneous side-guiding and support for sliding satisfying the relationship:

$$L2 > 2/3 * \max (50 \text{ mm}, P/4).$$

2) The device of claim 1, wherein the nearly tension free loop generates a tension of 2 x 10^{-2} N/m per gram per square meter of web material or less.

3) The device of claim 1 or 2 wherein said entry position defining means comprises one or more friction inducing rollers or fixed shaft that increase the paper tension in the alignment section above a minimum tension of 6 N/m.

4) The device of any previous claim wherein the means for defining the partially curved first movement trajectory comprises one or more fixed rollers or curved shells that contact the web over at least part of its width and
wherein at least one of these fixed rollers or fixed shells has a radius of curvature exceeding 32 mm.

5) The device of any previous claim, wherein the lateral guiding means comprise adjustable parallel flanges adjustable in a lateral direction with respect to the web.

6) The device of any previous claim, wherein the means for defining the partially curved first movement trajectory comprises one or more segmented fixed rollers or curved shells that contact the web over at least part of its width and wherein the lateral guiding means comprise adjustable parallel flanges adjustable in the lateral direction with respect to the web and wherein the end segments of said fixed rollers or curved shells are integrated with said adjustable flanges and are moveable with those.

7) The device of any of claims 4 to 6, further comprising additional flexing means that prevent wrinkles being formed in unsupported areas in between the segments composing the segmented fixed rollers or fixed shells.

8) The device of any previous claim wherein the means for defining the partially curved first movement trajectory comprises a combination of at least two curved shells whose length is determined by relative rotation between the at least two curved shells.

9) The device of claim 8, wherein an edge of one of the curved shells is in helical form and matches the form of an edge of another of the curved shells.

10) A method to align a web of continuous print medium originating from an upstream device to a stable lateral position with respect to a printing system for further printing on said continuous web, said printing system comprising a friction drive, the method comprising:

guiding a print medium at a reduced print medium-tension compared to the downstream tension imposed by a friction drive of the printing system, such that the print medium forms a nearly tension free loop prior to entering into sliding contact in a sliding zone along a means defining a first curved trajectory in the web travel direction, the sliding zone of the first curved trajectory extending over a finite length L1 satisfying the relation

$$L1 > \max (50 \text{ mm}, P/4)$$

where P corresponds to the width of the print medium,

centering said print medium by guiding both lateral edges in the lateral direction by adjustable side-guides along a second trajectory that comprises at least a part of the first trajectory where the print medium is in sliding contact with said means defining said curved trajectory, the length (L2) of the second trajectory satisfying the relationship:

$$L2 > 2/3 * \max (50 \text{ mm}, P/4).$$

11) The method of claim 10 characterized in that said side-guides are adjusted to a distance W satisfying a relation compared to the print medium width P

$$P - 2 \text{ mm} < W < P$$

12) The method of Claim 11 characterized in that said side-guides are adjusted to a distance W satisfying a relation compared to the print medium width P

$$P - 1 \text{ mm} < W < P.$$